

which zones have a poor content and information of the different species.

#### RAPTOR-HUMAN IMPACTS IN ZIMBABWE

HARTLEY, R.R. *Zimbabwe Falconers' Club, Falcon College, Esigodini, Zimbabwe.* P.J. MUNDY. *Department of National Parks and Wild Life Management, Box 2283, Bulawayo, Zimbabwe.* K. HUSTLER. *Natural History Museum of Zimbabwe, P.O. Box 240, Bulawayo, Zimbabwe*

With 60 species of diurnal and 12 nocturnal raptors, it is important to prioritize conservation measures, including removal of species from the protected list. Changing agriculture and artificial nest sites have assisted accipiters, lanner falcon (*Falco biarmicus*), black-shouldered kite (*Elanus caeruleus*) and barn owl (*Tyto alba*). However, habitat destruction, chemical pesticides and direct persecution are principal threats. Human population growth rate is >3.0% and peasant farming areas (40%) are generally overpopulated. Commercial farmlands (30%) offer some suitable habitats, especially extensive ranches; intensive farming areas have been sprayed with agrochemicals, cultivation has increased and bateleur eagles (*Terathopius ecaudatus*) have been eliminated. DDT spraying ceased in 1990, but poisoning of vultures and deforestation continue. Only the martial eagle (*Polemaetus bellicosus*) is under serious threat.

#### ECOLOGY OF THE NORTHERN SAW-WHET OWL (*AEGOLIUS ACADICUS*) IN THE SOUTHERN APPALACHIAN MOUNTAINS

MILLING, T.C., B.L. COCKEREL AND M.P. ROWE. *Department of Biology, Appalachian State University, Boone, NC 28608 U.S.A.*

The breeding range of the northern saw-whet owl (*Aegolius acadicus*) extends south to the mountains of Virginia, Tennessee, and North Carolina. What little regional information exists suggests that the saw-whet owl is restricted to the fragmented, high elevation spruce/fir forests, which are declining due to introduced pests and acid deposition. This in part has led North Carolina to designate this owl as a "species of special concern." Radiotelemetry was employed on seven adult male owls to locate roost sites, pellets and to document nocturnal activity. Preliminary data indicate 72% of diurnal roosts are in conifers, with an average roost height of 4.6 m. Nocturnal activity was not confined to any specific forest type, yet hardwood forests were utilized more than previously thought. Pellet analysis shows that small mammals are the primary prey items; however, food caches at roosts indicate the importance of small passerines in saw-whet diets. Our data are too preliminary to offer concrete suggestions on the conservation and management of the saw-whet owl in this region; however, it is hoped that additional field seasons will reduce our ignorance on the ecology of the smallest owl in the southeast.

#### SEXING OF RED-TAILED HAWKS BY HALLUX TOE DEPTH

O'LEARY, B.E. *Carolina Raptor Center, P.O. Box 16443, Charlotte, NC 28297 U.S.A.*

If it is possible to sex red-tailed hawks (*Buteo jamaicensis*) by measurement rather than surgically, it would allow banders and raptor researchers to correctly sex red-tails in the field. I decided to measure the depth of the hallux. I extended the toe straight out, and measured the depth of the toe from the second scale from the end and then measured straight above it. I was careful not to squeeze the tissue. I used birds that had recently died. I verified their sex during necropsies. I collected data from 41 males and 30 females. Birds with a hallux measurement of 13.50 mm and below were males and birds 14.75 mm and above were females. Means of this measurement were significantly different between the sexes (*t*-test,  $P = 0.001$ ). The birds between 13.50 and 14.75 mm could not be classified to sex by hallux depth, although 23 out of 28 necropsied birds in this range were males.

#### RAPTOR FEATHER FAUNA

PHILIPS, J.R. *The Raptor Center, University of Minnesota, St. Paul, MN 55108 U.S.A.*

Feathers from 43 owls and 39 hawks, eagles and falcons were examined for arthropods. Insects found were lice and several mammal fleas from prey. Lice eggs were attached to feather vanes. A few skin and nidicolous mites were present, but most of the mites were feather and quill mites. Feather mites occur primarily ventrally near the rachis in the sheltered slots between the pennaceous barbs. Juvenile mites molt in the plumulaceous barbs, leaving masses of exuviae. Eggs are laid in grooves on the ventral rachis and on the posterior sides of pennaceous barbs. Quill mites complete their life cycle in the quill, filling it up with eggs, exuviae and excreta. To leave the quill and colonize other feathers, they use the superior umbilicus, or cut a round hole in the quill wall. Understanding the ecology of such feather fauna and the niches they occupy in the feather habitat will facilitate the diagnosis and treatment of ectoparasite infestations in raptors.

#### MONTAGU'S HARRIERS NESTING ON CORNFIELDS: VULNERABILITY AND POSSIBILITIES OF PRESERVATION

VINTCHEVSKY, A.E., D.E. VINTCHEVSKY AND A.M. YASIEVITCH. *Department of Biology, Grodno State University, per. Dovatora 3/1, Grodno, 230015 Belarus, C.I.S.*

Most of Montagu's harriers (*Circus pygargus*) in Belarus usually nest on cornfields. Late terms of nesting are the reason of losses of young caused by harvesting corn combines. We studied causes of nestling mortality and tried to help nestlings to escape abovementioned losses. Study began in neighborhoods of Grodno in June–August 1993.